IN THE CLAIMS

Please amend claims 1-4, 9, 10, 16-18 and 22-24 and cancel claims 7, 14, 15, 21, 27 and 31 as shown below.

1. (Currently Amended): A method for planning minimally invasive direct coronary artery bypass (MIDCAB) for a patient, the method comprising:

obtaining acquisition data from a medical imaging system;

generating a 3D model of ~~the~~ coronary arteries ~~and one or more cardiac chambers of interest~~ of the patient;

identifying one or more anatomical landmarks on said 3D model and inserting corresponding translucent geometric markers thereat, utilizing user input at an operator console;

saving views of said 3D model in a database;

measuring sizes of lesions and a number of the lesions in the coronary arteries utilizing said 3D model;

registering said saved views of said 3D model on a workstation of an interventional system, said saved views of said 3D model having said translucent geometric markers; and

visualizing one or more of said registered saved views on a display screen of said interventional system.

2. (Currently Amended): The method of claim 1, further comprising identifying, from said 3D model, orientation, size and dimensions of the ~~coronaries~~ coronary arteries ~~and ventricles~~.

3. (Currently Amended): The method of claim 1, wherein said obtaining acquisition data is implemented with protocols directed for imaging the coronary arteries ~~and ventricles~~.

4. (Currently Amended): The method of claim 3, further comprising utilizing post processing software to process said acquisition data so as to generate interior views of the coronary arteries ~~and ventricles~~.

5. (Cancelled).

6. (Original): The method of claim 1, further comprising registering MIDCAB instruments on said interventional system.

7. (Cancelled).

8. (Original): The method of claim 1, wherein said obtaining acquisition data is EKG gated.

9. (Currently Amended): A method for planning minimally invasive direct coronary artery bypass (MIDCAB) for a patient, the method comprising:

obtaining acquisition data from a medical imaging system using a protocol directed toward the coronary arteries and left ventricle;

segmenting said acquisition data using a 3D protocol so as to visualize ~~the~~ coronary arteries and ~~the~~ a left ventricle;

generating a 3D model of the coronary arteries and the left ventricle of the patient;

identifying one or more anatomical landmarks on said 3D model and inserting corresponding translucent geometric markers thereat, utilizing user input at an operator console;

saving views of said 3D model in a database;

measuring sizes of lesions and a number of lesions in the coronary arteries utilizing said 3D model;

registering said saved views of said 3D model on a workstation of an interventional system, said saved views of said 3D model having said translucent geometric markers;

visualizing one or more of said registered saved views on a display screen of said interventional system; and

identifying, from said 3D model, orientation and any anomalies associated with the coronary arteries and the left ventricle.

10. (Currently Amended): The method of claim 9, further comprising utilizing post processing software to process said acquisition data so as to generate interior views of the coronary arteries and the left ventricle ~~ventricles~~.

11. (Previously Presented): The method of claim 10, wherein said 3D model and said interior views are visualized through the display screen associated with said interventional system.

12. (Original): The method of claim 9, wherein said obtaining acquisition data is EKG gated.

13. (Original): The method of claim 9, further comprising registering MIDCAB instruments on said interventional system.

14. (Cancelled).

15. (Cancelled).

16. (Currently Amended): A method for planning minimally invasive direct coronary artery bypass (MIDCAB) for a patient, the method comprising:

obtaining acquisition data from a cardiac computed tomography (CT) imaging system using a protocol directed toward ~~the~~ coronary arteries ~~and left ventricle~~;

segmenting said acquisition data using a 3D protocol so as to visualize the coronary arteries ~~and left ventricle~~, including interior views of the coronary arteries;

generating a 3D model of the coronary arteries ~~and left ventricle~~ of the patient;

identifying one or more anatomical landmarks on said 3D model and inserting corresponding translucent geometric markers thereat, utilizing user input at an operator console;

saving views of said 3D model in a database;

measuring sizes of lesions and a number of the lesions in the coronary arteries utilizing said 3D model;

registering said saved views of said 3D model on a fluoroscopy system, said saved views of said 3D model having said geometric markers; and

visualizing one or more of said registered saved views with said fluoroscopy system; and

identifying, from said 3D model, orientation and any anomalies associated with the coronary arteries ~~and the left ventricle~~.

17. (Currently Amended): The method of claim 16, further comprising utilizing post processing software to process said acquisition data so as to generate interior views of the coronary arteries ~~and ventricles~~.

18. (Currently Amended): The method of claim 16 ~~17~~, wherein said 3D model and said ~~immersible~~ registered saved views are visualized through a display screen associated with said fluoroscopy system.

19. (Original): The method of claim 16, wherein said obtaining acquisition data is EKG gated.

20. (Original): The method of claim 16, further comprising registering MIDCAB instruments on said interventional system.

21. (Cancelled).

22. (Currently Amended): A system for planning minimally invasive direct coronary artery bypass (MIDCAB) for a patient, comprising:

a medical imaging system for generating acquisition data;

an image generation subsystem for receiving said acquisition data and generating one or more images and a 3D model of ~~the~~ coronary arteries ~~and the left ventricle~~ of the patient, the image generation subsystem further measuring sizes of lesions and a number of the lesions in the coronary arteries utilizing said 3D model;

an operator console for receiving user input to identify one or more anatomical landmarks on said one or more images or said 3D model and to insert corresponding geometric markers thereat;

a workstation including post processing software for registering ~~saved views~~ said images of said 3D model on an interventional system, said ~~saved views~~ said images of said 3D model having said geometric markers; and

wherein said interventional system is configured for visualizing one or more of said registered ~~saved views~~ images therewith, quantifying distance and location information for a cardiac point of interest, and identifying an incision location and path for MIDCAB based on said quantified distance and location information for said cardiac point of interest.

23. (Currently Amended): The system of claim 22, wherein said image generation subsystem is configured with protocols directed for imaging the coronary arteries ~~and ventricles~~.

24. (Currently Amended): The system of claim 23, wherein said post processing software is further configured to process said acquisition data so as to generate interior views of the coronary arteries ~~and ventricles~~.

25. (Original): The system of claim 24, further comprising a display screen associated with said interventional system, said display screen for visualizing said 3D model and said interior views.

26. (Original): The system of claim 22, wherein said interventional system is configured for registering MIDCAB instruments therewith.

27. (Cancelled).

28. (Previously Presented): The method of claim 1, further comprising:

based on said registered saved views, identifying a location and path of an incision to reduce a size of the incision through a chest wall of the patient for MIDCAB.

29. (Previously Presented): The method of claim 9, further comprising:

based on said orientation and anomalies, identifying a location and path of an incision to reduce a size of the incision through a chest wall of the patient for MIDCAB.

30. (Previously Presented): The method of claim 16, further comprising:

based on said orientation and anomalies, identifying a location and path of an incision to reduce a size of the incision through a chest wall of the patient for MIDCAB.

31. (Cancelled).